News Release

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OIL-COALESCING TECHNOLOGIES: IT’S WHAT’S INSIDE THAT MATTERS
With Its PuraGuard® Air Dryer Filter Setting the Standard, Bendix Emphasizes the Importance of Choosing Replacement Cartridges Wisely to Protect Modern Vehicle Systems

ELYRIA, Ohio – March 27, 2019 – Almost half a century ago, Bendix pioneered the use of air dryers to protect commercial vehicle air systems; and nearly 20 years ago, the company developed its first oil-coalescing filter. As its patented PuraGuard® oil-coalescing cartridge marks more than a decade as the industry’s leading-edge air dryer filter, Bendix stresses the importance of aftermarket research when fleets and drivers replace their cartridges.

“The good news is that the road-tested effectiveness of Bendix’s oil-coalescing filters has made PuraGuard essentially the industry standard now,” said Richard Nagel, Bendix director of marketing and customer solutions – Air Charging. “All North American major vehicle builders now offer PuraGuard on a variety of vehicles and/or engines and recommend it during replacement, which has contributed to its sustained growth – up over 400 percent in the last few years alone. They spec it because they’ve seen the difference it makes, and they know how vital it is to keep a truck’s air supply dry and free of oil aerosols.

“The not-so-good news,” he continues, “is that as a result, the replacement aftermarket is a much more confusing landscape than it was 10 years ago, even as the consequences of making an incorrect choice have gotten more expensive.”

Bendix – the North American leader in the development and manufacture of active safety, air management, and braking system technologies for commercial vehicles – offered
insight on the dryer cartridge aftermarket at the Mid-America Trucking Show in Louisville, Kentucky.

An Air Refresher

For as long as there have been air braking systems, there’s been a need for a supply of clean and dry compressed air to keep them operating safely and effectively. As air use expanded to include other vehicle systems and more advanced technologies, it became even more crucial to prevent contamination: Automated Manual Transmissions (AMTs), emissions controls, and advanced safety technologies, such as full stability, all incorporate the use of compressed air; and with higher levels of automation come solenoid valves that provide precise control, but require cleaner air than traditional manual brake valves.

Oil-coalescing cartridges – which remove and purge oil aerosols from the system’s air, along with moisture – provide an extra level of protection for these components, which can be costly to replace. They achieve this through the use of two specifically engineered mediums: an oil filter and a desiccant to remove moisture – each of which can do its own job, but not the other’s. As more advanced technologies have become the norm, so have oil-coalescing air dryer filters.

Oil passed by the compressor is the enemy of the air dryer. Mixed with water, oil plugs up valves and coats the desiccant inside the dryer cartridge until eventually the cartridge can no longer remove moisture – which leads to excessive moisture in the service tanks.

When replacing a cartridge, Nagel emphasized, if a vehicle was originally equipped with an oil-coalescing filter, the replacement should be one as well. Upgrading from a standard cartridge to an oil-coalescing version is always a possibility – but never make the opposite swap.

Choose Wisely

Growing demand attracts new market suppliers, especially in the commercial vehicle aftermarket, and today’s oil-coalescing, spin-on cartridge options are more numerous – but certainly not equal. Many brands compete mainly on price, without detailing what’s actually inside the cartridge.

“When Bendix designed PuraGuard®, we took the unique step of creating a cartridge that directs air through the oil-coalescing filter first, and then through the desiccant,” Nagel explained. “This was a unique design approach that minimized the impact of oil aerosols

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contaminating the desiccant and significantly reducing its capacity to remove moisture from the air, leading to less cartridge efficiency over time and a lower-quality air supply.”

This means end-users should ask a few technical questions when considering a replacement oil-coalescing filter:

- Is the oil-coalescing filter placed before the desiccant?
- If so, is the oil-coalescing filter placed horizontally above the desiccant?

“That question regarding oil-coalescing filter placement is especially important because today, some aftermarket suppliers have adopted the oil-filter-before-desiccant approach, but have neglected to take gravity into account,” Nagel said. “If the oil-coalescing media is sitting on top of the desiccant, the oil droplets fall straight down into the desiccant bed, which means you’re right back to degrading the drying efficiency. That’s exactly why PuraGuard® has the oil-coalescing filter in a vertical plane, away from the desiccant, where gravity pulls the drops down to the sump in the cartridge.”

Ask about the desiccant, too: Even those desiccants considered good for some applications aren’t always suitable for an air brake application where the dryer cartridge is exposed to high temperatures, water saturation, vibration, wild temperature changes, and pressure cycling. Failing desiccant can begin to clump, and at this point, it not only stops removing moisture but eventually turns into powder that can get into the air system and contaminate brake valves.

“As fleets and owner-operators make their service decisions, it’s a case where saving a few dollars on the replacement part can come back to bite them if air contamination winds up damaging or mitigating the effectiveness of a higher-cost investment like a collision mitigation system,” Nagel said.

Working with its industry partners on these and other aftermarket considerations, Bendix continues to shape tomorrow’s transportation.

**About Bendix Commercial Vehicle Systems LLC**

Bendix Commercial Vehicle Systems, a member of the Knorr-Bremse Group, develops and supplies leading-edge active safety technologies, energy management solutions, and air brake charging and control systems and components under the Bendix® brand name for medium- and heavy-duty trucks, tractors, trailers, buses, and other commercial vehicles throughout North America. An industry pioneer, employing more than 3,200 people, Bendix is driven to deliver solutions for improved vehicle safety, performance, and overall operating cost. Contact us at
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